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Annual Report of the Iowa Academy of Science, 1982-83

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Annual Report of the Iowa Academy of Science, 1982-83

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PREFACE

The year 1983 marks the 108th anniversary of the founding of the Academy in 1875. The first 100 years was reviewed in a special centennial issue of the *Proceedings* in March, 1975 in an article by this writer. Since that time, a running history of the organization has been published as the "Annual Report." This is then the eighth annual chapter in the history of the Academy since the centennial, and it is the last report of Academy affairs to be written by this author. Whether this format and practice will continue in future years depends on the choice of the Board of Directors and the new Executive Director.

The report for the year just ended is based on the minutes of the Board of Directors and committee reports on file in the Academy office at the University of Northern Iowa. Academy records more than a few years old are catalogued in the Special Collections section of the Iowa State University Library in Ames. Many details of Academy activity summarized here can be found in the several issues of the *I.A.S. Bulletin*, the Academy's newsletter.

THE 95th SESSION

Luther College provided a pleasant site for the Annual Meeting of 1983. The local arrangements committee provided outstanding assistance to the Academy's Associate Executive Director in planning and executing the meeting on April 22 and 23. The Section Chairs again provided the primary planning guidelines. (The Board recommended and the membership approved a Bylaw amendment making the Section Chairs the Annual Meeting Committee in future years.) Meeting in September, the Section Chairs and Annual Meeting Committee blocked out the program, which eventually included the following, in addition to the contributed paper sessions:

Thursday, April 21

2:30 p.m. Board of Directors Meeting

Friday, April 22

9:00 - 10:30 a.m. JUNIOR ACADEMY POSTER PAPERS

9:00 - 5:00 VIDEOTAPE FESTIVAL
Videotapes on topics related to the symposia were shown hourly both Friday and Saturday.

10:30 - 11:45 a.m. GENERAL SESSION I
President Harry T. Horner, presiding.
Welcome: H. George Anderson, President, Luther College.
Speaker: Paul G. Risser, Illinois Natural History Survey, Champaign, IL:
"Natural Areas: Just Fun or Really Important?"

12:00 - 1:30 AWARDS LUNCHEON
President Harry T. Horner, presiding.
This served luncheon honored groups and individu-

1:30 - 2:00 p.m.

2:00 - 5:30 p.m.

5:30 - 6:30 p.m.

6:30 - 8:00 p.m.

8:15 - 9:15 p.m.

Saturday, April 23

9:00 - 10:30 a.m.

8:00 - 11:00 a.m.

8:00 - 11:00 a.m.

al students who had performed in an exemplary manner in science activities throughout Iowa. Several individual awards were presented. Several teachers were honored as they received the Iowa Academy's Excellence in Teaching Award.

ANNUAL BUSINESS MEETING

CONCURRENT SESSIONS

A. Symposium: "Iowa's Driftless Area"
(Sponsored jointly by Botany, Conservation and Geology Sections and the Conservation and Preserves Committee.)

B. Symposium: "Musical Acoustics"
(Sponsored jointly by the Physics and Engineering Sections and by the Iowa Chapter of the American Association of Physics Teachers.)

C. Symposium: "The Crisis in Science Education: Problems and Proposed Recommendations"

CONCURRENT SECTION MEETINGS

Agricultural Sciences

Botany

Chemistry: Inorg., Anal., & Phys.

Chemistry: Organic & Biological

SOCIAL HOUR/RECEPTION

Honoring Robert and Margaret Hanson

PRESIDENT'S BANQUET

President Harry T. Horner, presiding.
Presentation of Iowa Academy of Science Awards.
Installation of new president and remarks by outgoing President Horner.
Response by President Duane C. Anderson.

GENERAL SESSION II

President Duane C. Anderson, presiding.
Speaker: Norman E. Borlaug, Nobel Laureate
CENTROL INTERNACIONAL DE MAIZ Y TRIGO
"Food Production in a Fertile World"

POSTER PAPERS

VIDEOTAPE FILM FESTIVAL

CONCURRENT SESSIONS

Agricultural Sciences

Anthropology

Botany

Chemistry: Inorg., Anal., & Phys.

Chemistry: Organic & Biological

Conservation

Engineering

Geology

Physics

Physiology

Psychology

Executive Director, IAS

Science Teaching
Zoology

11:00 - 12:00	GENERAL SESSION III President Duane C. Anderson, presiding. Speaker: Hugh Iltis, Professor of Botany University of Wisconsin - Madison: "The Catastrophic Sexual Transmutation Theory (CSTT): The Epigenesis of the Teosinte Tassel Spike of the Ear of Corn"
1:15 - 4:30 p.m.	SYMPOSIUM: "The Evolution/Creation Controversy and the Nature of Science" (Sponsored by the Anthropology Section.)
1:00 - 2:30 p.m.	SYMPOSIUM: "History of Bridge Design" (Sponsored by the Engineering Section.)

The Junior Academy poster papers presented on Friday morning included ten by students from ten different high schools. They were judged by a committee made up of section vice-chairs and the Student Programs Committee. Senior poster papers outnumbered those of other years, including 17 from 8 different sections.

Section attendance and numbers of papers are shown in Table 2. Registered attendance is summarized in Table 1.

Table 1. Registered Attendance, 1983

Category	Pre-registered Papers*	Others	Walk-in Fri.	Sat.	Total
Members:					
Regular	78	116	88	13	295
Student	18	8	5	2	33
Subtotal	96	124	93	15	328
Nonmembers:					
Regular	19	8	19	2	48
Student	67	4	5	8	84
Subtotal	86	12	24	10	132
Guests, etc.	13	31	—	—	44
TOTAL	195	167	117	25	504

*Some attendees presented more than one paper.

It is clear from Table 1 that 47% of the contributed papers were presented by nonmembers, of whom 78% were students. To put it differently, 37% of all the papers were by nonmember students. Regular Academy members presented only 43% of the contributed papers; 10% were by student members. We see also that 65% in attendance were members; this constitutes 23% of the entire membership. Most of the student nonmember papers were co-authored by Academy members.

The Awards Luncheon

Awards for excellence in science teaching were presented to the following teachers by David McCalley, UNI, on behalf of the Academy:

Gene Ulrich (Biology), North High School, Sioux City
Kenneth Hartman (Chemistry), Ames High School, Ames
Lewis Stoneking (Earth Science), Ottumwa High School,
Ottumwa
Ms. Cameron Vanni (Elementary Science), Hoarace Mann
Elementary, Iowa City

Table 2. Attendance Summary, 95th Session, 1983

	No. of Papers	Attendance	Relative Section Interest*(%)
<i>Contributed Papers:</i>			
Agricultural Science	12	16	8.2
Anthropology	10	18	2.5
Botany	33	50	20.8
Chemical Education	—	—	6.9
Chemistry C.	13	25	13.5
Chemistry C	14	26	9.3
Conservation	15	51	16.6
Engineering	4	15	5.0
Geology	10	33	11.6
Mathematics	—	—	6.1
Physics	19	30	8.9
Physiology	22	27	7.8
Psychology	4	11	2.8
Science Teaching	9	50	30.2
Zoology	17	33	18.2
TOTALS	182	385	
<i>Invited Papers:</i>			
Symposium: "Iowa's Driftless Area"		7	185
Symposium: "Musical Acoustics"		6	37
Symposium: "The Crisis in Science Education"		6	100
Symposium: "History of Bridge Design"		2	13
Symposium: "The Evolution/ Creation Controversy and the Nature of Science"		8	200**
TOTALS		29	335 (Fri.)
General Session I - Risser (Fri.)			300
General Session II - Borlaug (Fri.)			275
General Session III - Iltis (Sat.)			275
Annual Business Session			45
Awards Luncheon			184
President's Banquet			241
Videotape Festival (Fri.) (Sat.)			101 49

*"Relative Section Interest" is the percent of all IAS members indicating a particular section interest. The percents are not additive because of multiple section interest.

**Held on Saturday; others concurrently on Friday.

Sharon Fisher (Junior High Science), Meredith Junior High
School, Des Moines
Robert Wilson (physics), Belmond Community High School,
Belmond

Four secondary students who had been invited to present poster papers were selected to represent Iowa at the 1984 meeting of the American Junior Academy of Science in New York City in May, 1984. Two of the four (as indicated below) will serve as alternates:

Sumanth Kaushik, Iowa City
Leslie Fletcher, Fairbank
Donnie Linder, Oelwein (alternate)
Ken Irion, Bettendorf (alternate)

The following programs for secondary students were acknowledged and their directors commended for their work in providing incentives

for science achievement among pre-college students:

The Drake Physics Prize
 The Hawkeye Science Fair
 The Iowa Science, Engineering & Humanities Symposium
 The Iowa State Science Talent Search
 The National Governor's Youth Science Camp
 The Northeast Iowa Regional Science and Engineering Fair
 The Physics Olympics
 The Quad-Cities Area Science and Engineering Fair
 The Space Shuttle Program
 The UNI Science Symposium

Four students, including two alternates, were honored for their selection by a special committee appointed by the Governor's office as recipients of an award formerly referred to as the "National Governors' Youth Science Camp" award, sponsored by the State of West Virginia:

Sondra Lea Johnson, Benton
 Piper Lynn Wall, Rock Rapids
 Trisha Lynne Lemrick, Sidney (alternate)
 Joellen Rae Price, Mason City (alternate)

Governor Branstad expressed regret that he was unable to be present to personally congratulate the students who were recognized at the Awards Luncheon.

The President's Banquet

Following the Friday evening banquet, President Horner introduced Darrel Hoff of UNI, chairman of the Academy's Recognition and Awards Committee, who in turn introduced nominators for the following awards:

Distinguished Service Award:
 Paul Waite, State Climatologist
 Distinguished Iowa Scientist Award:
 David W. Staniforth, ISU
 Distinguished Fellow Award:
 Kenneth J. Frey, ISU

A special "one-time" award was presented to R. W. Hanson, in recognition of his 16 years as Executive Director, by Clifford McCollum. President Horner announced additionally that the Board had voted to make Hanson an honorary Life Fellow and that a special fund had been established to be known as the "Robert W. Hanson Publication Fund", to assist in the financing of small monographs and special volumes.

Following the awards, President Horner made his final comments as president and turned the gavel over to Duane C. Anderson, who responded with his first comments as president for 1983-84. Both were reported in the *I.A.S. Bulletin* for June 1983.

MINUTES OF THE ANNUAL BUSINESS SESSION

April 22, 1983

The meeting was called to order by President Harry Horner of ISU at 1:30 p.m. in the Centennial Union Dining Room at Luther College, with 45 members in attendance. A quorum was declared.

The first item on the agenda was the reading of the "Report of the Board of Directors" by R. W. Hanson, Executive Director. (The text of that report is given under "Review of Academy Activity" elsewhere in this report.)

Frank Starr presented a brief Treasurer's report showing that on

March 31, 1983, the Academy's cash assets consisted of the following:

Asset	Amount	Interest Rate
Checking Accounts	\$ 1,067.38	5.25%
Money Market Savings Acct.	26,424.44	8.00%
Gulf Power Bonds	6,140.00	15.00%
SW Gas Corp. notes (face value \$5000)	4,285.76	12.50%
Total	<u>\$37,917.58</u>	

In addition, Academy assets included the net value of the unsold farm produce from 1982 (\$11,000), the value of Heritage book inventory owned by the Academy (\$5349.50), and office equipment equity of \$7,450. The sum of these assets, not including office equipment, was \$54,267.08, about \$7,763 higher than a year ago.

Sister Marguerite Neumann presented the Membership Committee report. The following Members had been promoted to Fellow during the past year:

Alan Atherly	Gerald Kaufman
John Bamrick	Jay Kopp
Gladys Black	Sr. Diana Malone
Carl V. Gisolfi	Samuel J. Tuthill
Rogers C. Gurira	Elliott L. Uhlenhopp
Joseph Kapler	

Promoted to Emeritus:

Winifred Asprey
 Leland Johnson
 Thomas E. Rogers

The names of the following members who had died in 1982-83 were read, and the audience observed a moment of silence in respect of their memory:

Robert E. Breckenridge
 Merwin Dougal
 Henry Giese
 Delma Harding
 Corwyn Hicks
 George E. Lamp
 Jay Lush

The report of the Election Committee indicated that the following had been elected for 1983-84:

Directors: Burton Loupee, Rockwell International
 Lenore T. Durkee, Grinnell College
 President-elect: Richard Wacha, Drake University

(Because of Wacha's position on the Board as Director, G. Edgar Folk, Jr., will complete his term.)

Those elected were congratulated and introduced.

It was also reported that the following Constitution and Bylaw amendments were approved by mail ballot:

CONSTITUTION, ARTICLE IV — OFFICERS

Add new Section 6. All officers shall be expected to reside in the State of Iowa during the tenure of their office. An officer who moves to another state after election shall be expected to resign the office.

BYLAWS, ARTICLE V — COMMITTEES

(1) New Section 2. Committee on Committees

2a. The Committee on Committees shall consist of six Members or Fellows each serving three year terms, two being appointed each year;

and the President-elect.

2b. The chair shall be the President-elect.

2c. Duties. The Committee on Committees shall be responsible for the structural and functional aspects of the Academy standing and temporary committees. It shall recommend names to the President-elect for staffing yearly and unanticipated vacancies on these committees, giving consideration to: (1) balanced representation; (2) the number of committees and duties which a potential nominee is serving; (3) the principle of rotation of committee assignments; and (4) the responses from the membership to a periodic survey of member interests in and qualifications for service on a committee.

- (2) Renumber existing Section 2 as Section 3, and substitute the following:

Section 3: Annual Meeting Committee

3a. This Committee shall be made up of the Local Arrangements Chair for the forthcoming Annual Meeting and Section Chairs.

3b. The chair of the Committee shall be appointed by the President.

3c. Duties. The duties of the Annual Meeting Committee shall be to develop general plans for the forthcoming Annual Meeting. They shall evaluate the Annual Meeting no later than October 1 following the meeting and make recommendations for the general planning and format for the next Annual Meeting. The Executive Director shall work closely with the Committee to implement the recommendations.

- (3) New Section 4. Conservation and Preserves Committee (approved by the Membership).
- (4) Delete Section 7. Social Implications Committee (approved by mail ballot March 1982.)
- (5) Renumber sections 3-6 as 5-8 and sections 8-11 as 9-12.
- (6) New Section 13. All committees shall submit written reports to the Board of Directors at the request of the Executive Director.

Hanson's report indicated that the Board had approved another Bylaw amendment, which he read, and President Horner asked for a motion to approve it by the Membership. David Fagle so moved; Clifford McCollum seconded. The vote was unanimously in favor of the following:

ARTICLE V — COMMITTEES

Section 5. Education Committee

5a. This committee shall consist of six Members or Fellows appointed for three-year terms with two members appointed each year after the first year, selected so that all of the following areas are represented: university or college science and science education, the Iowa Council of Science Supervisors, elementary and secondary classroom teaching, and the Science Teaching Section of the Academy. The Director of the Junior Academy, the chair of the Student Programs Committee, and the Science Consultant of the Department of Public Instruction shall be ex-officio voting members.

5b. The chair of the committee shall be appointed by the President.

5c. Duties. The duties of the Education Committee shall be to study current trends and pressures on science education and to assess their possible effects in Iowa; to develop position statements or resolutions concerning educational matters for consideration by the Board of Directors of the Academy; to recommend consideration of action by other Academy committees or sections; and to fulfill other functions as requested by the President.

Renumber other Bylaws accordingly.

President Horner asked Hanson to present for vote the recommendation of the Board that the dues be increased to \$20.00 per year for 1984 for regular members and \$10.00 for students. Moved by Ben Graham and seconded by George Knaphus, the motion carried on voice vote without dissent.

In preparation for adjournment President Horner asked if there were other matters to consider. Paul Joslin moved a resolution commending R. W. Hanson for his years of fine service as Executive Director. The motion evoked a round of applause.

The Business Session was declared adjourned at 2:00 p.m.

REVIEW OF ACADEMY ACTIVITY in 1982-83

The following "Report of the Board of Directors" was read at the Annual Business Session on April 22, 1983, by Executive Director Hanson. It is a brief summary of Board deliberations as they relate to committee and other activity and provides an overview of Academy activity during the year from April 15, 1982 through April 22, 1983:

This has been the busiest year in my memory so far as Board activity is concerned. Normally the Board meets twice a year in April and November, but since the Annual Meeting a year ago, the Board met 5 times.

On June 17 the Board met in Marshalltown and unanimously approved a proposal for a Committee on Committees. The 1983 election included the Bylaw amendment creating this new standing committee and it was approved overwhelmingly. The committee structure of the Academy and the active participation of almost 100 members has been the key to the Academy's success and this committee has been needed for coordination of committee appointments and performance.

The resignation of *Proceedings* Editor Nels Lersten was followed by the consideration of applications from six individuals or couples. Two of them were selected as finalists and were interviewed at a July Board meeting in Toledo.

Also in June the Board approved the razing of the farm house and it was in fact burned down last fall. A survey of some Academy sections had indicated interest in the formation of a new section on computer science, and the Board has continued to look into that possibility.

A significant consultative session took place at the June meeting with Wayne Liljgren, President of the Iowa College Foundation, to explore means by which the Academy might develop an endowment fund. This led to a special meeting with Directors of Development in September, at which much was learned about the ways the Academy could develop a sounder financial base.

The June meeting was continued in July to interview candidates for *Proceedings* editor. As you know, Roger and Marilyn Bachmann were appointed and have picked up the reins from Nels Lersten.

The budget for the current year as adopted at that July meeting, having been put off in June. It was a deficit budget, but we have caught up during the year.

Plans were made for an October 8 recognition of the authors of the Heritage book during the regular annual meeting of the Iowa Natural Heritage Foundation.

The Board and the Finance Committee met with several Directors of Development at Grinnell College in September, as mentioned before. On October 30 the Board was together again and approved some Constitution and Bylaw changes that were later included in the election mailing for 1983.

One of these makes the Section Chairs the Annual Meeting Committee, a change which merely reflects the way the Annual Meeting is usually planned.

A most important committee report was approved by the Board in October — the report of the *ad hoc* Education Committee to the Governor concerning the shortage of science and mathematics teachers. This report received wide publicity and had a definite influence in the preparation of Governor Branstad's recommended budget for the next biennium.

James Macmillan was named the IAS delegate to the AAAS Section X and to the National Association of Academies of Science. I will serve as a second delegate to NAAS because of election to the AAAS Council.

Finding a new editor for the *Iowa Science Teachers Journal* came before the Board because of the resignation of A. C. Haman from that position. Since the *Journal* is a joint UNI-Academy publication, the Board agreed to limit the search to UNI. As you know, Carl Bollwinkel of the Price Laboratory School at UNI has since been appointed.

A dues increase was approved by the Board in October and will be voted on by members present today. This was one of the first recommendations of the Directors of Development.

One of the main items on the October agenda was the report of the Long Range Planning Committee concerning the future of the Academy's administration. The ramifications of the report were such that it was decided to hold yet another Board meeting in January to discuss the recommendations. In the meantime the LRPC was asked to meet again to make their plan more concrete.

The Board also sanctioned the Farm Committee's intention to a)

consider farm management alternatives and b) development of a promotional brochure.

Weather and driving conditions interfered with the Board's plan to meet in January, but after two postponements, the Board did meet on February 26. Consideration of the more detailed LRPC recommendations concerning Academy administration took up most of the meeting, but the Board realized a short term plan was needed for '83-84. The philosophy of the LRPC plan was essentially that institutions be asked to provide released time for Academy administration in the long run, and the Board has in effect adopted that as a long range philosophy. The short term plan was adopted yesterday when the Board met again.

The April meeting took place yesterday and was interrupted for completion this morning at 9:15 a.m.

Several important decisions were made:

1. To present today, for vote, a Bylaw amendment making the Education Committee a standing committee.
2. A recommendation from the Farm Committee to change the farm management plan to a custom farming plan as opposed to a 50/50 crop share lease.
3. That the Panel on Controversial Issues no longer use that particular name but continue to serve as they see fit to deal with the creation/evolution controversy.
4. Encouraged President-elect Anderson to set up a Committee on Public Information to address the positive aspects of informing the public about science via news media of all kinds.
5. Accepted an invitation from Grinnell College for the 1987 Annual Meeting. (Wartburg College will host the meeting in Waverly in 1986.)
6. Approved a *balanced* budget for 1983-84 totaling \$77,137, an increase of 3% over this year's expenditures.
7. Appointment of Hanson as Managing Editor or Director of Publications and Consultant on Administration through May 1984.

Committee Activity

During 1982-83, the affairs of the Academy were in the hands of eight standing committees and four *ad hoc* committees, besides the Board of Directors, involving a total of almost 100 members. The composition of all committees and the Board of Directors appears at the end of this Annual Report.

The **Annual Meeting Committee** met in September at UNI with most of the Section Chairs to block the 1983 Annual Meeting at Luther College. The responsibility for this planning was in the hands of the Academy's new Associate Executive Director, James G. Macmillan of UNI, who was appointed by the Board in April 1982 to take over as Executive Director completely in the fall of 1983. This arrangement provided much-needed relief in the workload of the retiring Executive Director during the transition. Due to the fact that the Section Chairs must be intimately involved in the planning of the Annual Meeting, a change in this committee's make-up was suggested by Hanson to the Board, after a survey of the Section Chairs indicated their willingness to serve in fact as the Annual Meeting Committee. This change was officially approved by the vote of the membership in March 1983.

The plan for the 1983 Annual Meeting which developed during the fall of 1982 is reflected in the summary of the 95th session appearing at the beginning of this Annual Report, along with data concerning numbers of contributed papers, etc.

Future meeting dates and locations have been established as follows:

- 1984: The University of Iowa, Iowa City, April 27-28
- 1985: Central College, Pella, April 26-27
- 1986: Wartburg College, Waverly
- 1987: Grinnell College, Grinnell

The **Conservation and Preserves Committee** became a standing committee in 1982. Having been instrumental in founding the Iowa Natural History Association, this group turned its attention to planning for the symposium on the "Driftless Area" to be held as part

of the 1983 Annual Meeting. Arrangements were negotiated with the *Proceedings* editors to publish the symposium in the *Proceedings* in 1983-84 with reduced page charges to authors and special editorial assistance. Some of the other concerns of this committee are reflected in the following excerpts from their minutes of November 20, 1982:

- The need for special publications in natural history.
- The need for a resolutions subcommittee to deal with threatened and endangered species, curatorial problems in the state, biological surveys, and the possible formation of a Natural History Section.
- The publication of a report on the status of conservation and preservation in Iowa.

The **Panel on Controversial Issues** reported in October 1982 on the status of the creation/evolution controversy in Iowa essentially as follows:

This has been an active year throughout Iowa with regard to the creation-evolution controversy. On July 30 a preliminary skirmish in Des Moines has been quietly resolved in favor of the evolution side.

Subsequently a creationist leader announced a drive to install a list of creationist textbooks in school libraries in 60 Iowa communities. The pro-evolution coalition described earlier undertook to oppose this drive. The coalition consists of the IAS Panel, the Committee of Correspondence, the Iowa Civil Liberties Union, the Iowa Freedom Foundation, ISEA, the Iowa Library Association, the Des Moines Catholic Diocese, the Des Moines Jewish Federation, an informal statewide group of clergymen, and several smaller groups. The coalition has functioned by generating publicity, making representations to individual community officials, appearing before the school boards, and helping local citizens to set up public meetings. These efforts have so far been uniformly successful. About 20 community school boards have rejected the creationist proposal and none has adopted it. Public meetings have been held in Clear Lake, Waterloo, Cedar Rains, and Davenport; they may shortly be held in Mason City, Ames, Oskaloosa, and perhaps other towns as well. On the whole we can conclude that the pro-evolution coalition functioned very well and creationism has suffered a substantial setback. However, there are communities on the creationists' list of targets that the controversy has not yet reached, and the final decision is not yet in.

The Iowa scientific community is represented in the defense of evolution by two nominally separate bodies: the IAS Panel; and the Iowa Committee of Correspondence (C/C), part of a national network. Actually the two bodies have overlapping memberships and in practice act as one. The Panel and the C/C are undertaking one operation independently of the pro-evolution coalition. Reviews are being prepared of all the creationist titles that are proposed for accession to school libraries. The reviews will be compiled and distributed to all AEAs, with permission to reprint. Each review carries the name of the Academy, with a disclaimer of endorsement.

When the IAS Panel began its work, a fairly elaborate scenario was drawn up for our involvement in local communities. Papers were prepared as guides for public presentations; members were to be assigned in pairs to public meetings; reports were to be turned in as guides for later speakers. This procedure is not being followed. The papers appear not to be used; members are assigning themselves, generally not in pairs.

Nominally the Iowa scientific community, and the Academy, are represented in the pro-evolution coalition by the Panel or the C/C. Actually the scientific community is represented largely by individuals acting on their own.

A later report responded to the concern of the Board of Directors that the Panel was operating under a broad title that did not describe its specific focus on the creation/evolution controversy and offered these recommendations to the Board:

- The present Panel should be replaced by a regular Academy Committee on Controversial Issues (or some similar title) whose charge would not be limited to addressing only the creationism-evolution issue. The Committee should have a limited membership appointed by the President; it should not be a panel or speakers' bureau open to all comers.

- The Committee should be authorized to set up panels devoted to specific issues. A panel in defense of the teaching of evolution might be the first of these. Other panels may develop.
- The Iowa Committee of Correspondence may be designated and recognized as the Academy's panel on creation-evolution. The Iowa C/C shall be authorized to affiliate with the national C/C network but shall assume no financial responsibility for the national. The Iowa C/C shall distribute only open literature and no confidential material.
- Academy agencies in defense of science, including the proposed Committee and its Panels, should be funded through the regular Academy budget on the same basis as other permanent Academy agencies and at whatever level is practicable, recognizing the present financial stringency.

The Board will act formally on these recommendations in the fall of 1983.

The *ad hoc* Education Committee was appointed in May 1982 and accepted an assignment from the Board to respond to a request from the Governor's Science Advisory Council to serve as a task force to study and make recommendations concerning the shortage of science and mathematics teachers in Iowa, using the report of the National Academy of Sciences convocation on the sorry state of science education in this country. Executive Director Hanson had attended this convocation held in May 1982 and had participated in a AAAS-sponsored meeting of affiliates whose purpose was to develop state and local initiatives to respond to the crisis.

The committee's report, developed through several long meetings in the summer of 1982, was delivered to the Governor via Ed Stanek of the GSAC in October 1982. It had a significant effect on the legislation proposed by the Governor for the 1983-85 biennium and influenced the legislature to approve the Governor's recommendation for a \$10,800 one-year appropriation for the Academy (an increase of \$6,300).

The committee's report received wide attention even before it was officially approved as an Academy statement. Perhaps the most controversial recommendation was that qualified science and math teachers in the "critical shortage" areas be given salaries a few steps higher than usual on the salary schedule.

Other recommendations to alleviate the shortage of teachers of science and mathematics included the following:

- School systems should hire only qualified (approved) teachers to teach mathematics and science in grades 6-12. Temporary teaching approvals should either be eliminated or severely limited and, if not eliminated, they should be closely monitored by the Department of Public Instruction.
- Provisions should be made for the Department of Public Instruction to keep accurate records of teacher qualifications matched to teaching assignments.
- Certification policies should be implemented that will insure that elementary and middle/junior high school teachers as well as secondary teachers are adequately prepared to teach the mathematics and science appropriate to those levels.
- Summer programs and coordinated academic year in-service programs should be initiated to upgrade teachers to minimum standards through cooperative efforts of private industry, colleges/universities, the DPI and Area Education Agencies.
- Areas identified as having critical shortages of teachers (i.e., mathematics and science) should be given special salary consideration to attract qualified beginning teachers. This might be accomplished by renegotiating salaries a few steps higher on the salary schedule than usual for most teachers.
- Scholarships and/or loans from government and private sources should be made available to encourage qualified students to enter science or mathematics teaching. Businesses and industry that depend on a continuous supply of scientifically and technically trained persons should assist in providing such scholarship funds. The state should provide for loans and loan cancellation for students, who, after graduation, teach a specified number of years in Iowa.
- Qualified consultants in science education, with strong backgrounds

in mathematics, science, and science education, should be employed at strategic geographical locations throughout the state within the Area Education Agency system to assist teachers in keeping up-to-date.

- Government agencies, schools, colleges/universities, professional organizations, and industry should work together to recognize and reward outstanding performance by both teachers and students at all levels, as part of an effort to raise the prestige of mathematics and science teaching as a profession.
- College/university mathematics and science teacher education programs should be reviewed to find ways to make them more attractive to prospective teachers and more relevant to the needs of practicing teachers.
- Consideration should be given at colleges/universities to counseling prospective science teachers into qualifying for DPI "all sciences" approval, including at least 12 semester hours each in physics, chemistry, biology, and earth science, of which 6 hours in each area must be in foundation courses. Such approvals would insure that these individuals qualify for any job opening in science at the secondary level.
- Guidance counselors in secondary schools should be contacted by professional organizations such as the Iowa Academy of Science and by teacher education institutions to identify talented students of mathematics and science to encourage them to pursue careers in teaching.
- State agencies should encourage colleges/universities to identify ways to attract women and minority persons into mathematics and science teaching careers.
- School system administrators and curriculum coordinators should insist that both mathematics and science be taught to all students during every year K through 8 with minimum instructional times specified.
- Local school systems should require at least two years of mathematics and two years of science (life and physical sciences, including technology and computer applications) during grades 9-12 for graduation. An additional year of both mathematics and science should be advised for college-bound students.
- Alternative delivery systems should be explored to maintain the minimum programs in mathematics and science. School reorganization may be necessary in some cases.

The committee further recommended some specific actions by the Office of Governor:

- Declare the importance of science and technological education to the welfare of the state and nation.
- Request legislative support for the Iowa Academy's efforts to promote the improvement of science instruction at all levels, including the Academy's Education Committee.
- Appoint a committee made up of persons from higher education, the Department of Public Instruction, private industry, local schools, the Iowa State Education Association, the Iowa legislature, and the Iowa Academy of Science, to review the recommendations of this report and to begin their implementation.

A letter was addressed to the Academy by four senators in May 1983, requesting Academy assistance for the General Assembly to develop a plan for improving the quality of science education in Iowa. The Education Committee has acknowledged this request without specific plans for response as of this writing. Goals for 1983-84 are being developed, including the following:

- Review legislation influencing science education and prepare position papers for the Board of Directors to utilize as necessary.
- Communicate appropriate legislation to the IAS membership through available mechanisms.
- Review the 1982 IAS report to Governor Ray (Crisis in Science Education: Problems and Recommendations) and make recommendations for updating and implementing.
- Serve in an advisory capacity to state agencies concerning rule making and interpretation applicable to science education.
- Develop and maintain a file of reports impacting upon science education in Iowa. One copy of the reports will reside at the IAS office and one copy will stay with the EC committee member responsible. Reactions to such reports will be prepared for the IAS Board of Directors as deemed necessary.

- Apprise the IAS Public Information Task Force of its activities by sending meeting minutes to the Public Information chair.
- Review current college entrance and high school graduation requirements in science for their compatibility and relevance to contemporary student needs.
- Work with the Student Programs Committee and the Iowa Junior Academy of Science to improve science programs for Iowa Students.
- Arrange for annual selection of award recipients for the "Governor's National Youth Science Camp" and the "President's Excellence in Science Teaching" programs. Costs for mailing announcements will be covered by the Department of Public Instruction.
- Assess the needs of elementary teachers of science as input is received.

The **Election Committee** had some difficulty in finding two candidates for President-elect this year. (Apparently the industry of recent and current presidents has given some potential candidates concern about the time that the commitment involves.) The slate offered included:

President-elect: **Richard Wacha***, Drake University
Stanley Weinberg, Ottumwa
 Directors: **Lenore Durkee***, Grinnell College
Burton Loupee*, Rockwell International
G. Edgar Folk, Jr., University of Iowa
Robert Simpson, University of Northern Iowa

Those starred were elected. G. Edgar Folk, Jr. was appointed by the Board to fulfill Wacha's term because of his election to the presidency. The Treasurer was elected for a three-year term in 1982 and there will not be an election for that office until 1985.

The **Finance Committee** is chaired by the Treasurer. That committee and the Board met with several directors of development from Iowa colleges and universities in September at Grinnell College to discuss appropriate ways for the Academy to develop its financial base in anticipation of expanded activity. The guests at this meeting were very impressed with the Academy's extensive programs on such a limited budget. Among their suggestions was the unanimous opinion that the Academy's dues were far too low for the magnitude of its activity and services. As a result, the Board recommended a dues increase of one-third for 1984. It was passed at the Annual Business Session.

The Finance Committee has been dormant for the past two years because of many changes occurring in the Academy's leadership and the Board's discussion of whether or not to employ a director of development. Improved net farm income (due to less money spent on soil conservation projects), and projected income from sales of the Academy's current inventory of "Iowa's Natural Heritage" have solved the Academy's asset drain somewhat, and the incentive for the Finance Committee to work on fund-raising has diminished accordingly. Nevertheless, a meeting of the committee held in June 1983, with President Anderson present to provide some additional direction, resulted in some specific plans and goals for 1983-84. An idea that had been discussed for years seemed to be coming to fruition, *viz.*, the creation of "packages" of support for specific Academy projects, publications, and conferences. The duties of the committee and the Treasurer came under scrutiny, and it is likely that some Bylaw changes will be forthcoming during the coming year.

The **Heritage Project Steering Committee**, jointly representing the Iowa Natural Heritage Foundation and the Academy, met in July, 1982, January, 1983, and March, 1983, to deal with marketing decisions and reports of sales of "Iowa's Natural Heritage." The most recent update of the project's total cost was \$651,483, with \$193,339 remaining to be paid. Most of the first printing of 30,000 was expected to be sold by year's end, and marketing plans for the future prompted the committee to proceed with plans for a second printing of 15,000 of the regular edition. It was agreed that the \$5,234 that

the Foundation owed the Academy be paid in books so that the Academy would possess a small inventory of books for sale to its members. A new agreement was negotiated with the Iowa Bankers Association to continue selling the books through banks. It is anticipated that the sale of the second printing will produce some income for the Academy, all of which will go into an endowment fund. Only the interest from the fund will be used and will be designated for the support of special publications projects.

The **Long Range Planning Committee** continued its *ad hoc* status during the year but was expanded to include 9 members plus the Executive Director and the Associate Executive Director, ex-officio. Their deliberations were concerned with future administrative arrangements for the Academy, considering the transition to a new Executive Director in the fall of 1983 and the recognized need for additional administrative time. The administrative workload was viewed as consisting of several areas that might be separable under different individuals at different locations, if it were not possible to enlarge the Executive Director's position to full-time. The need for the equivalent of full-time administration was acknowledged, but the cost and feasibility problems came under careful study. It was agreed that the post should be affiliated with one or more educational institutions, so that desirable ties (from the standpoint of both the Academy and the individual(s)) could be maintained. It was suggested that such institutions be asked to contribute released time to help support the Academy's administrative needs.

The general philosophy of these recommendations was accepted by the Board of Directors as a long range plan, but they recognized the need for a short range plan of 2-3 years, to cover the intended tenure of James Macmillan as Executive Director. The Board adopted a plan for 1983-84 that split off the duties of publications management and asked R. W. Hanson to serve through May, 1984 as Managing Editor and administrative consultant.

In other areas the Long Range Planning Committee recommended (1) increased circulation and more issues of the *Iowa Science Teachers Journal*, (2) an awards program for high school students in science, (3) that a symposium on the crisis in science education be included in the 1983 Annual Meeting, and (4) that an *ad hoc* Education Committee be appointed by the president. All of these recommendations have been implemented except the first one. The demand for the *Journal*, as indicated by response to general mailings to teachers, has been disappointing, and may reflect the fact that many of the states 2200 "science" teachers in the secondary schools do not have science teaching as a primary interest or assignment.

The **Membership Committee** addressed themselves to two major areas in 1982-83 — the recruitment of new members and the question of promotion to Fellow. A pocket poster was designed by Executive Director Hanson with committee help and was distributed to the various colleges, universities, agencies, and companies represented among those members included in the Leadership Directory. A revised brochure inserted in the pocket of the poster yielded less than 100 new members, but the posters will continue to be available as time goes on. The procedures for promotion to Fellow came under question again (the last time was in 1977). Prior to 1970 only Fellows could hold office or vote, and a survey of the membership indicated a predominant sentiment that the category be dropped. However, strong opinions to the contrary were given thoughtful consideration by the Board and the category was retained, with what were intended to be more definite requirements. The Constitution was revised accordingly, but in the years that followed the meaning of the intended requirements as stated became less specific in interpretation. After much deliberation, the Membership Committee proposed a new nomination form, to be used when Fellow nominations were again solicited, after a temporary moratorium. The Board will consider some changes in the wording of the requirements before the moratorium is lifted.

Table 3 shows changes in membership counts by categories during the five years preceding and including 1982-83.

Table 3. Membership Counts 1979-83

Category	1979	1980	1981	1982	1983
Associate	0	0	1	1	1
Member	701	706	773	777	806
Student	218	186	162	146	142
Fellow	421	395	374	367	349
Life Member	39	38	39	38	37
Emeritus	72	76	84	83	89
Distinguished Fellow	10	12	14	17	14
TOTAL	1461	1414	1437	1412	1445

Table 3 reveals that student membership has been dropping steadily since 1979, when the student membership peaked at 218. The present student membership is the lowest since 1972, when records were started on membership counts. It can be seen also that the number of Members has been increased while the number of Fellows has been decreasing. Fellow promotions have not been numerous in recent years, some older Fellows have taken Emeritus status, and some are deceased. The increase in the Emeritus count is consistent with this trend. Total membership counts are relatively static; since 1972, when the total was 1450, the low count was 1357 in 1974. Obviously, membership recruitment is a continuing task to merely stand still.

The management of the Parish Farm has occupied Board time repeatedly through the years since 1970, when interest in the farm as an Academy asset first developed. The completion of most terracing and tiling projects has allowed the Farm Committee to turn more attention to optimizing income. At the same time, the pros and cons of keeping vs. selling the farm provided an incentive for the committee to develop a statement of philosophy which argued for the appropriateness of the Academy's involvement in agriculture. (The statement of philosophy was included in its entirety in the *I.A.S. Bulletin* of June 1983.) A change in the management contract was approved by the Board in April 1983 that provided for management fees of 10% net income (as opposed to gross income) and a change to custom farming (as opposed to crop-share lease). The farm was scheduled to be involved in the Payment-In-Kind program to the extent of 50% in 1983. In 1982-83, net farm income came to \$23,000, substantially less than usual because of the effect of weather conditions on crop yields in 1982.

Responding to a recommendation of the Directors of Development who met with the Board and Finance Committee in the fall of 1982, the Farm Committee proposed and developed a 4-color brochure to encourage substantial giving to the Academy similar to the Parish farm bequest. The farm and the Academy's exemplary management of it were the substance of this attractive brochure, which was made available at the banquet at the Annual Meeting in April. It was hoped that the lack of response to a general mailing in May would be compensated by long term response at least on a limited scale.

The Recognition and Awards Committee was asked by the Board of Directors to limit the number of awards presented so as not to dilute the quality of the honor. The awards presented in 1983 were mentioned earlier in this report. The Academy was asked by the Governor's office via the chairman of the Governor's Science Advisory Council, Ed Stanek, to evaluate nominations for the new Governor's Science Medals. The Recognition and Awards Committee accepted this assignment and completed the task on relatively short notice early

in the fall of 1982. Four awards were presented in Governor Ray's office in December. Three of the recipients were active Academy members: Dr. Henry Gilman, ISU chemist; Dr. James A. Van Allen, University of Iowa astronomer/physicist; Dr. Lois Tiffany, ISU botanist. The fourth award went to Arthur Collins, founder of Collins Radio (now part of Rockwell International). The detailed statement of their achievements appeared in the January 1983 *I.A.S. Bulletin*.

The Excellence in Science Teaching Awards program was again coordinated by David McCalley even though he had indicated his intention of resigning that role at the beginning of the year. Late in the year, word was received from President Reagan's office that each state was being asked to nominate two science teachers for special presidential recognition. The request was referred to the Education Committee and the Recognition and Awards Committee jointly and representatives of the two groups selected two nominees at a June 30, 1983 meeting from the dossiers of the ESTA candidates of the past three years. A more formal procedure will be developed for 1983-84 but short notice required this approach this first time. The award will be presented in the President's office in Washington this fall and a \$5000 grant will be awarded to the recipient's school. (The final choice will be reported in the *I.A.S. Bulletin*.)

The Student Programs Committee functioned in 1982-83 as the administrative body for the Iowa Junior Academy of Science. Efforts were organized to promote student research in the schools through regional workshops held on September 24, 1982 in Waterloo, Storm Lake, Creston, and Davenport, and attended by about 200 students and teachers. The workshops were part of a plan proposed to the American Association for the Advancement of Science by R. W. Hanson, Executive Director, that involved a grant of \$1000 for "start-up" and "continuation" research awards. Student Programs were also supported by a contribution of \$5000 from Pioneer Hi-Bred International and \$250 from the Iowa Chapter of the American College of Surgeons. The Iowa Junior Academy of Science also sponsored the Iowa Physics Olympics and several other student activities. These were mentioned in an earlier section of this report.

The effort to increase the number of student presentations in 1983 was successful, indicated by the number of poster papers included in the Annual Meeting program. The papers of this kind that were presented at Luther College are listed at the end of this Annual Report. The student winners were listed earlier under "Awards Luncheon".

The growing scope of the Academy's Student Programs effort prompted the Board of Directors to appoint Lynn Glass of Iowa State University as the Director of the Junior Academy (and perhaps "Director of Student Programs"). This was one of the areas identified by the Long Range Planning Committee as an identifiable administrative category. The Board had concluded that the program would function best under a person with institutional support.

Two new committees were created late in 1982-83, and the roster for one was completed — the Committee on Committees. The group has not met but will later assist the President-elect in making committee appointments. The other is a new group referred to by new President Anderson as the "Public Information Task Force." It will replace, in some respects, the defunct Social Implications Committee, and will present to the news media the positive aspects of science and the Academy's activities. Part of the incentive for this more positive approach was the legislative and public reaction to the Academy's visibility in the creation/evolution controversy, something which continued this year. It was mentioned by a legislative appropriations subcommittee when Executive Director Hanson presented the Academy's budget request for the 1983-85 biennium. President Anderson's hope is that a select committee will be able to develop fuller media coverage of science in Iowa, including possible participation of

public broadcasting. (The attempt of the Social Implications to begin a series of newspaper articles four years ago did not come to fruition, but response from interested Academy members indicated that there is a good prospect that the idea can be brought to an active state.)

The changes in the leadership of the Academy were more extensive than usual in 1983-83. An **Associate Executive Director** was added to the staff (**James Macmillan**, who assumed the full title of Executive Director on July 1, 1983); the *Proceedings* was turned over to new co-editors **Roger and Marilyn Bachmann** to replace **Nels Lersten**; **Carl Bollwinkel** of Price Laboratory School at UNI accepted appointment as editor of the *Iowa Science Teachers Journal* when **A. C. Haman** retired from that position; **David McCalley** resigned as coordinator of the Excellence in Science Awards program (without replacement at this writing); the position of **Managing Editor** of Academy publications was created apart from the Executive Director's position and filled by **R. W. Hanson**; several Bylaws changes were made that changed the make-up of the Annual Meeting Committee, made the new Education Committee a standing committee, and created the Committee on Committees.

Publications

The change of editors for the *Proceedings* in the fall of 1982 was made smoothly. No changes were made in submission nor review procedures. However, a change was made during the year in the choice of typesetting firms so as to take advantage of the most modern technology available.

The *Iowa Science Teachers Journal* will continue as a three-issue-per-year publication. This is a cooperative project of the Academy and the University of Northern Iowa, but the share of publication and mailing costs borne by the Academy is likely to become larger in the future. The quality of the *Journal* was improved dramatically during **A. C. Haman's** tenure as editor, and his practice of using UNI student art for the cover was commendable. A trial mailing to non-subscribers was made in the fall to once more attempt to increase the mailing list. One thousand teachers received a free copy with a return card and a letter offering the *Journal* free of charge. About 25% of the recipients returned the card and have been added to the mailing list, which now totals 1400.

A recognition banquet was held in October 1982 to honor the authors of "**Iowa's Natural Heritage**." Other individuals and groups who had been involved were also recognized. At the close of the banquet, an autograph party was held to allow authors to sign one another's copies. Each author received one regular edition and one limited edition. Sales of the book and meetings of the steering committee are reported elsewhere in this report.

National Involvement

Two Academy members served on the Board of Directors of the **National Association of Academies of Science (NAAS)** in 1982-83. **Frank Starr** became president, having been elected the year before. **R. W. Hanson** served as past-president, and was responsible for a symposium on "Science and Belief" at the January, 1982 meeting of the AAAS in Washington, DC. The symposium became the basis for a book entitled "Science and Creation: Theological, Geological, and Educational Perspectives" to be published jointly by AAAS and Macmillan in the fall of 1983. The book was edited by **R. W. Hanson**. He continues on the NAAS Board, having been elected as NAAS delegate to the AAAS Council in 1982.

In October of 1982, Executive Director Hanson participated in a meeting of the **AAAS Coalition of Affiliated Groups** to develop ways of responding to the crisis in science education much publicized after the May 1982 convocation held by the National Academy of Sciences. During that same trip to Washington, DC, Hanson attend-

ed a meeting of the National Science Board Panel on Pre-College Science Education and had an opportunity to provide some Iowa background based on the Education Committee's report to the Governor. The new "Science Education News" put out by AAAS covered in some detail the activities in Iowa related to the science education crisis, particularly the work of the Academy's Education Committee.

Financial Matters

An operating budget was approved for 1982-83 at a summer Board meeting in 1982. The Finance Committee did not participate in the budget process. The budget included the \$4500 state appropriation, the Pioneer Hi-Bred, AAAS, and College of Surgeons contributions for Student Programs, and an estimate of the dollar value of UNI support of the *Iowa Science Teachers Journal*, released time, and services. During the year some modifications were made in the budget, bringing the total for the year to \$90,875.

Table 4 is the Balance Sheet for June 30, 1983, with a comparison with a year ago. The item "Net income (loss)" is a fair but imperfect basis for estimating the increase or decrease in assets. The table does not list the actual value of the Parish Farm, the Academy's most valuable asset. The Board and the Farm Committee have concurred that the farm should not be sold, even though the Code of Iowa limits proscriptions (such as the one forbidding the sale of the farm for 75 years) to a 25 year period. The farm was given to the Academy in 1960.

Table 4. Balance Sheet

	June 30, 1982	June 30, 1983
Assets		
Checking	8,597.56	11,845.62
Money market fund (Jones)	15,146.49	-0-
Automobile	1,576.00	-0-
Bonds	6,140.00	6,140.00
Promissory note	4,285.76	4,285.76
Money market savings account	-0-	9,410.49
	<u>35,745.81</u>	<u>31,681.87</u>
New Worth		
Retained Earnings	26,705.18	34,169.81
Net income (loss)	9,040.63	(2,487.95)
	<u>35,745.81</u>	<u>31,681.87</u>

Not including accrued but unpaid interest, nor value of Parish Farm or office equipment equity. For IRS purposes, the farm is valued at \$60,000; its appraised value in 1960 when it was given to the Academy. No crops remained in storage on 6/30/83.

Table 5 presents actual Academy income and expenditures during 1982-83, distributed among four areas of activity and "reserve." The allocations, including that for administration, are based on good estimates rather than detailed accounting.

The design of Table 5 differs from previous years to accommodate the transition to a new Executive Director. The "Administrative Allocation" is based on reasonable estimates rather than strict accounting. The cost of running the Academy appears to require a budget of almost \$119,000, if the value of UNI support and services are estimated at \$16,000. However, it must be noted that about \$12,000 of this amount was turned over to the Iowa Natural Heritage Foundation from sale of the book "Iowa's Natural Heritage" and is not really a part of Academy operation. This year's operating budget is also higher than usual by about \$3,000 because of the payment for an Associate Executive Director to accommodate the transition and to accommodate the Board of Director's recognition that inadequate

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administrative time had been provided previously.

The Academy acquired an IBM Displaywriter word and data processing system in October 1982. It will be used for in-house accounting starting with the 1983-84 fiscal year. A new chart of

accounts will enable the Executive Director to use accounting detail to a fuller extent to allocate expenditures among various Academy activities.

Table 5. Sources and Allocation of Operating Funds, 1982-83

Resources			Allocation			
Source	Amount	Publications	Programs; Projects	Meetings etc.	Administration	Reserve
Farm (net)	23,000.00	-0-	-0-	2,880.47	20,119.53	-0-
Interest; dividend	3,439.03	-0-	1,007.69	-0-	2,431.34	-0-
Dues	17,278.25	1,550.00	-0-	-0-	15,088.25	640.00
IJAS Fees	765.00	-0-	765.00	-0-	-0-	-0-
Page Charges	2,015.00	2,015.00	-0-	-0-	-0-	-0-
Annual Meeting	6,220.35	-0-	-0-	6,220.35	-0-	-0-
Gifts; Grants	8,540.50	1,763.00	6,777.50	-0-	-0-	-0-
Reprints	626.00	626.00	-0-	-0-	-0-	-0-
Publications	20,374.42	19,635.36	-0-	-0-	739.06	-0-
Services	1,181.30	-0-	-0-	-0-	1,181.30	-0-
Miscellaneous	6,976.35	-0-	-0-	-0-	6,976.35	-0-
Comm. of Correspondence	1,189.78	-0-	1,189.78	-0-	-0-	-0-
Savings	6,635.25	-0-	-0-	-0-	6,635.25	-0-
Allocation of Income	98,241.23	25,589.36	9,739.97	9,100.82	53,171.08**	640.00
State Aid*	4,500.00	4,500.00	-0-	-0-	-0-	-0-
UNI Subsidy*	16,000.00	1,550.00	-0-	-0-	14,450.00**	-0-
Administration Allocation**		27,048.43 (40%)	11,495.58 (17%)	19,610.11 (29%)	9,466.95 (14%)	-0-
TOTAL FUNDS (Allocation)	118,741.23	58,687.79	21,235.56	28,710.93	9,466.95	640.00
TOTAL EXPENSE	114,593.92	57,009.79	19,406.24	28,710.93	9,466.95	
Carried Over	4,147.31	1,678.00(1)	1,829.32(2)	-0-	-0-	640.00(3)
From savings	(6,635.25)					
Net (loss)	(2,487.95)	(See Balance Sheet, Table 4.)				

*Do not appear in Academy accounts

**Estimates of percent of amounts not specifically identified under "Publications", "Programs", "Meetings", "Reserve", allocable to these areas.

(1) The R. W. Hanson Publications Fund (2) Student Programs, \$1558.80; Committees of Correspondence, 270.51 (3) Life Member fund

ACADEMY LEADERSHIP 1982-83

Officers

President — Harry T. Horner, Iowa State University
 Past-President — Stanley C. Grant, Elizabeth, Colorado
 President-elect — Duane C. Anderson, The University of Iowa
 Treasurer — Frank Starr, Waterloo Community Schools
 Executive Director — Robert W. Hanson, University of Northern Iowa
 Associate Executive Director — James G. Macmillan, University of Northern Iowa

Directors

William I. Brown, Pioneer Hi-Bred International, Inc., 1983
 Benjamin F. Graham, Grinnell College, 1983
 Kenneth M. Cook, Coe College, 1984
 Luther Erickson, Grinnell College, 1984
 Jean C. Prior, Iowa Geological Survey (1985)
 Richard S. Wacha, Drake University (1985)

Section Chairs

Agricultural Sciences — Arnel R. Hallauer, Iowa State University
 Anthropology — John R. Cole, University of Northern Iowa
 Botany — Roger M. Knutson, Luther College

Chemical Education — Donald DePrenger, Mason City
 Chemistry, Inorg. — Rogers C. Gurira, Grinnell College
 Chemistry, Org. & Biol. — Ron Warner, Simpson College
 Conservation — John B. Bowles, Central College
 Engineering — John W. Patterson, Iowa State University
 Geology — James C. Walters, University of Northern Iowa
 Physics — Verner Jensen — University of Northern Iowa
 Physiology — David Vogel, Oskaloosa
 Psychology — Frank X. Barrios, University of Northern Iowa
 Science Teaching — Carolyn Brockway, Cedar Rapids
 Zoology — Lawrence G. Mitchell, Iowa State University

Standing Committees

Annual Meeting Committee

Roger W. Bachmann, Iowa State University
 Thomas J. Blewett, Clarke College
 G. Edgar Folk, Jr., The University of Iowa
 Donald N. Langr, Iowa Central Community College
 Don E. Murphy, West Des Moines
 David Roslien, Luther College (chairman)
 Board Liaison: J. Macmillan

Conservation and Preserves Committee

Duane C. Anderson, The University of Iowa
 Wayne I. Anderson, University of Northern Iowa
 James Christiansen, Drake University
 Richard B. Hall, Iowa State University
 Sylvan T. Runkel, Des Moines
 Daryl Smith (chairman), University of Northern Iowa
 Board Liaison: Benjamin Graham

Election Committee

Wallace E. Akin, Drake University
 Gerald D. Flesch, Iowa State University
 Stanley C. Grant, (co-chairman), Elizabeth, CO
 Mary F. Guest, Clarke College
 Mary Ellen Harris, University of Dubuque
 Donald M. Huffman, (co-chairman), Central College
 Howard Laster, The University of Iowa
 Board Liaison: Richard Wacha

Finance Committee

Frank Starr, IAS Treasurer (chairman), Waterloo Community Schools
 Aruthur J. Bosch, Central College
 Gilbert E. Hewett, Cedar Falls
 Jay P. Kopp, Loras College
 Robert Lancaster, Cedar Rapids
 Burton Loupee, Cedar Rapids
 John McCurdy, Marshalltown Community College
 Harold Swanson, Drake University
 Board Liaison: Frank Starr

Membership Committee

Lenore T. Durkee, Grinnell College
 Greg Ludvigson, Iowa Geological Survey
 Sr. Marguerite Neumann (chairman), Clarke College
 Donald Roiseland, Wartburg College
 Gordon Searle, The University of Iowa
 Bernard J. White, Iowa State University
 Board Liaison: William Brown

Parish Farm Committee

Karl E. Goellner, Cedar Rapids
 Robert H. Hibbs (chairman), Marshalltown
 Harry T. Horner, Iowa State University
 Harold Hertel, State Conservation Commission
 Jonas Miller, Madrid
 Harold Swanson, Drake University
 Board Liaison: Harry T. Horner

Recognition and Awards Committee

Marc C. Albertsen, Pioneer Hi-Bred, Intl., Inc.
 David L. Fagle, Marshalltown Community Schools
 Jerry L. Ferrell, Maurice-Orange City Schools
 Darrel Hoff, University of Northern Iowa (chairman)
 Clifford E. LaMotte, Iowa State University
 David McCalley, Director ESTA Program, University of Northern Iowa (ex-officio)
 Jeffry Schabillon, The University of Iowa
 Board Liaison: Luther Erickson

Student Programs Committee

Ron Bonnstetter, The University of Iowa
 Gary E. Downs (chairman), Ames
 Lynn W. Glass, Iowa State University
 Suzanne Z. Kelly, Ames
 Joe R. Moore, Luana
 Don E. Murphy, West Des Moines, Associate Director, IJAS (ex-officio)
 Jack A. Gerlovich, Des Moines (ex-officio)
 Mary Sievert, Davenport, Director, IJAS (ex-officio)
 Roy D. Unruh, University of Northern Iowa
 Board Liaison: Jean Prior

*Special Committees**Education Committee*

Jack Gerlovich, (chairman), Des Moines
 Carolyn Brockway, Cedar Rapids
 Trevor G. Howe, Iowa State University
 Paul H. Joslin, Drake University
 Janice Kemp, Central College
 Gordon W. Searle, The University of Iowa
 Bob Ward, University of Northern Iowa
 Board Liaison: Kenneth Cook

Iowa's Natural Heritage Steering Committee

Robert W. Hanson (co-chairman), University of Northern Iowa
 Gerald Schnepf (co-chairman), Iowa Natural Heritage Foundation
 William J. Fultz, Des Moines
 Glenn Leggett, Grinnell
 Clifford McCollum, University of Northern Iowa
 Richard Wacha, Drake University
 Tom Cooper, Executive Editor, Ames (ex-officio)
 Board Liaison: Robert W. Hanson

Long Range Planning Committee

Clifford McCollum (chairman), University of Northern Iowa
 Julio Chiarella, Pella
 Gerald D. Flesch, Iowa State University
 Lynn W. Glass, Iowa State University
 Robert W. Hanson, University of Northern Iowa (ex-officio)
 Donald M. Huffman, Central College
 Harry T. Horner, Iowa State University
 George Knapfus, Iowa State University
 James G. Macmillan, University of Northern Iowa (ex-officio)
 Frank Starr, Waterloo Community Schools
 Wanda Wehner, University of Northern Iowa
 Board Liaison: Robert W. Hanson

Panel on Controversial Issues

Stanley Weinberg (Coordinator), Ottumwa
 Donald L. Biggs, Iowa State University
 Richard Bovbjerg, The University of Iowa
 Herbert Brunkhorst, Cedar Rapids
 Robert H. Chapman, Iowa State University
 Kenneth A. Christiansen, Grinnell College
 Warren Dolphin, Iowa State University
 Thomas E. Fenton, Iowa State University
 William A. Forsee, Abraham Lincoln High School, Council Bluffs
 Barron French, Wapello High School
 Jack Gerlovich, Des Moines
 Brian F. Glenister, The University of Iowa
 Harlow Hadow, Coe College
 Donald Huffman, Central College
 James Hungerford, Marshalltown Community Schools
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PAPER PRESENTATIONS, ANNUAL MEETING 1983

Invited Junior Academy Papers

Royal Becker, Davenport Central High School - Reclamation
 Leslie Fletcher, Wapsie Valley High School (Fairbanks) - Thyroxine's Effect on
 the Blood Glucose Level of *Mus Musculus*
 Ken Irion, Bettendorf High School

Sumanth Kaushik, Iowa City West High School - Numerical Modeling of
 Turbulent Wakes Behind Streamlined Bodies
 Donnie Linder, Oelwein High School - A Comparative Study of the Quality of
 Oelwein and Rural Oelwein Drinking Water
 Mark Ormsby, Marshalltown Senior High School - The Use of Autofluores-
 cence in Evaluating Mycorrhizal Infections in Sugar Maples
 John G. Piper, Valley High School (West Des Moines) - Validation of a
 Noninvasive Technique for Assessing the Electrical Activation Sequence
 of the Cardiac Ventricles
 Joellen Price, Newmann High School (Mason City) - Determining the
 Location of Bang-sensitive Mutant Behavior in Fruitflies
 John C. Stellwagen, Iowa City High School - How do Different Wavelengths
 of Light Affect the Rate of Photosynthesis?
 Steven Reed, Stuart-Menlo Community School - Mice: Stressed and Unstress-
 ed

Contributed Papers

(All abstracts of contributed papers received on time appeared in the March
 1983 PROCEEDINGS as an insert).

Errata: Hartley Fort Ceramics

The recent article (Tiffany, 1982) on Hartley Fort ceramics has four
 printing errors. In the caption for Figure 9 the word "Cork" should be
 "Cord", pages 144 and 145 are reversed, the text immediately below
 Figure 11 should not be in bold type, and the two small stars in Table
 23 should be replaced with X's.

TIFFANY, JOSEPH A. 1982. Hartley Fort ceramics. Proc. Iowa
 Acad. Sci. 89(4):133-150.